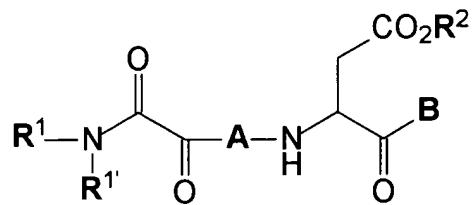


CLAIMS

We claim:

1. A compound of the following formula:

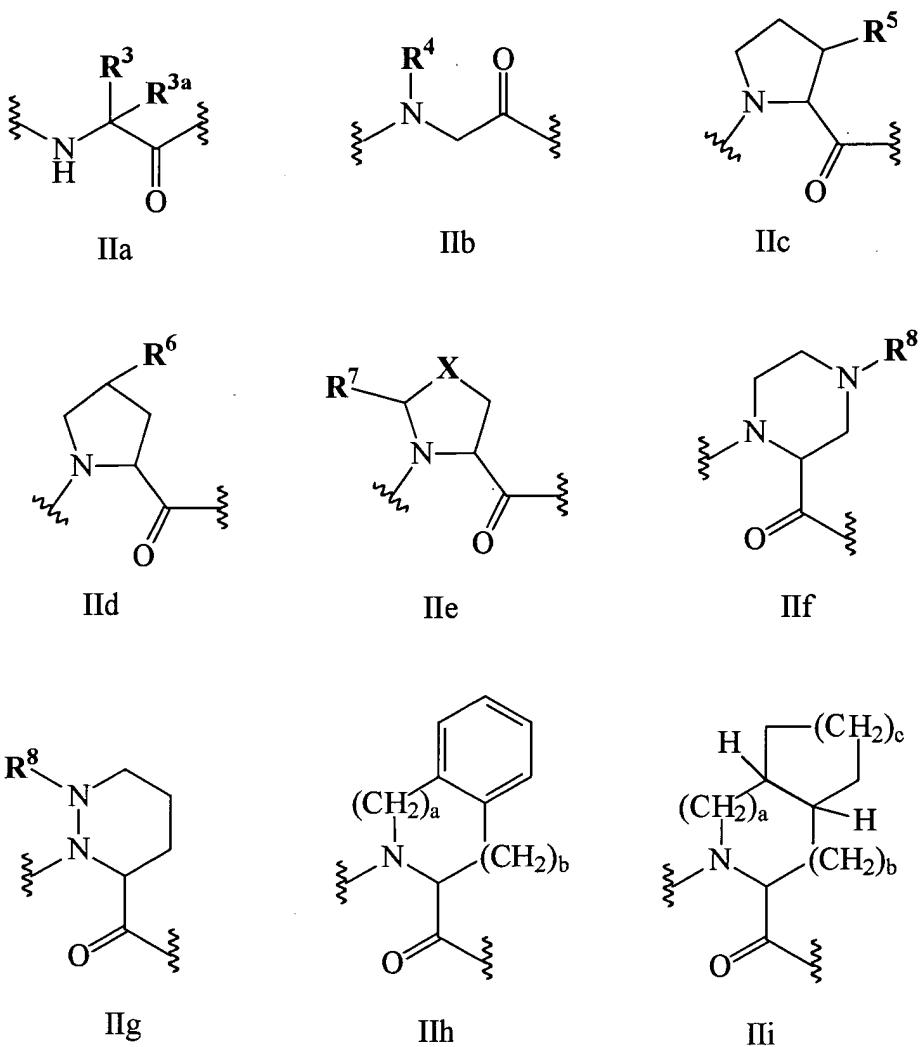


Formula I

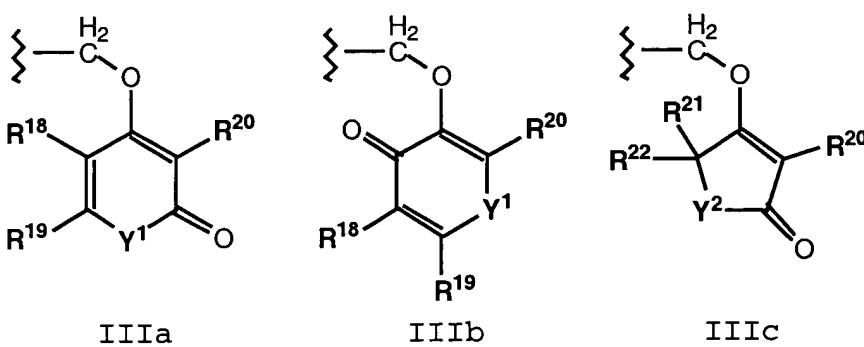
wherein:

A is a natural or unnatural amino acid of Formula IIa-i;

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B is a hydrogen atom, a deuterium atom, alkyl, cycloalkyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl, 2-benzoxazolyl, substituted 2-oxazolyl, (CH₂)_ncycloalkyl, (CH₂)_nphenyl, (CH₂)_n(substituted phenyl), (CH₂)_n(1 or 2-naphthyl), (CH₂)_n(substituted 1 or 2-naphthyl), (CH₂)_n(heteroaryl), (CH₂)_n(substituted heteroaryl), halomethyl, CO₂R¹², CONR¹³R¹⁴, CH₂ZR¹⁵, CH₂OCO(aryl), CH₂OCO(heteroaryl), or CH₂OPO(R¹⁶)R¹⁷, where Z is an oxygen or a sulfur atom, or B is a group of the Formula IIIa-c:



R^1 is alkyl, cycloalkyl, substituted cycloalkyl, (cycloalkyl)alkyl, substituted (cycloalkyl)alkyl, phenyl, substituted phenyl, phenylalkyl, substituted phenylalkyl, naphthyl, substituted naphthyl, (1 or 2 naphthyl)alkyl, substituted (1 or 2 naphthyl)alkyl, heterocycle, substituted heterocycle, (heterocycle)alkyl, substituted (heterocycle)alkyl, $R^{1a}(R^{1b})N$, or $R^{1c}O$;

$R^{1'}$ is hydrogen, alkyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl, heterocycle or substituted heterocycle;

or R^1 and $R^{1'}$ taken together with the nitrogen atom to which they are attached form a heterocycle or substituted heterocycle;

R^2 is hydrogen, lower alkyl, cycloalkyl, (cycloalkyl)alkyl, phenyl, substituted phenyl, phenylalkyl, substituted phenylalkyl, naphthyl, substituted naphthyl, (1 or 2 naphthyl)alkyl, or substituted (1 or 2 naphthyl)alkyl;

and wherein:

R^{1a} and R^{1b} are independently hydrogen, alkyl, cycloalkyl, (cycloalkyl)alkyl, phenyl, substituted phenyl, phenylalkyl, substituted phenylalkyl, naphthyl, substituted naphthyl, (1 or 2 naphthyl)alkyl, substituted (1 or 2 naphthyl)alkyl, heteroaryl, substituted heteroaryl, (heteroaryl)alkyl, or substituted (heteroaryl)alkyl, with the proviso that R^{1a} and R^{1b} cannot both be hydrogen;

R^{1c} is alkyl, cycloalkyl, (cycloalkyl)alkyl, phenyl, substituted phenyl, phenylalkyl, substituted phenylalkyl, naphthyl, substituted

naphthyl, (1 or 2 naphthyl)alkyl, substituted (1 or 2 naphthyl)alkyl, heteroaryl, substituted heteroaryl, (heteroaryl)alkyl, or substituted (heteroaryl)alkyl;

R^3 is C_{1-6} lower alkyl, cycloalkyl, phenyl, substituted phenyl, $(CH_2)_nNH_2$, $(CH_2)_nNHCOR^9$, $(CH_2)_nN(C=NH)NH_2$, $(CH_2)_mCO_2R^2$, $(CH_2)_mOR^{10}$, $(CH_2)_mSR^{11}$, $(CH_2)_ncycloalkyl$, $(CH_2)_nphenyl$, $(CH_2)_n(substituted\ phenyl)$, $(CH_2)_n(1\ or\ 2-naphthyl)$ or $(CH_2)_n(heteroaryl)$;

R^{3a} is hydrogen or methyl, or R^3 and R^{3a} taken together are $-(CH_2)_d-$ where d is an integer from 2 to 6;

R^4 is phenyl, substituted phenyl, $(CH_2)_mphenyl$, $(CH_2)_m(substituted\ phenyl)$, cycloalkyl, or benzofused cycloalkyl;

R^5 is hydrogen, lower alkyl, cycloalkyl, phenyl, substituted phenyl, $(CH_2)_ncycloalkyl$, $(CH_2)_nphenyl$, $(CH_2)_n(substituted\ phenyl)$, or $(CH_2)_n(1\ or\ 2-naphthyl)$;

R^6 is hydrogen, fluorine, oxo, lower alkyl, cycloalkyl, phenyl, substituted phenyl, naphthyl, $(CH_2)_ncycloalkyl$, $(CH_2)_nphenyl$, $(CH_2)_n(substituted\ phenyl)$, $(CH_2)_n(1\ or\ 2-naphthyl)$, OR^{10} , SR^{11} or $NHCOR^9$;

R^7 is hydrogen, oxo (*i.e.*, = O), lower alkyl, cycloalkyl, phenyl, substituted phenyl, naphthyl, $(CH_2)_ncycloalkyl$, $(CH_2)_nphenyl$, $(CH_2)_n(substituted\ phenyl)$, or $(CH_2)_n(1\ or\ 2-naphthyl)$;

R^8 is lower alkyl, cycloalkyl, $(CH_2)_ncycloalkyl$, $(CH_2)_nphenyl$, $(CH_2)_n(substituted\ phenyl)$, $(CH_2)_n(1\ or\ 2-naphthyl)$, or COR^9 ;

R^9 is hydrogen, lower alkyl, cycloalkyl, phenyl, substituted phenyl, naphthyl, $(CH_2)_ncycloalkyl$, $(CH_2)_nphenyl$, $(CH_2)_n(substituted\ phenyl)$, $(CH_2)_n(1\ or\ 2-naphthyl)$, OR^{12} , or $NR^{13}R^{14}$;

R^{10} is hydrogen, lower alkyl, cycloalkyl, phenyl, substituted phenyl, naphthyl, $(CH_2)_ncycloalkyl$, $(CH_2)_nphenyl$, $(CH_2)_n(substituted\ phenyl)$, or $(CH_2)_n(1\ or\ 2-naphthyl)$;

R¹¹ is lower alkyl, cycloalkyl, phenyl, substituted phenyl, naphthyl, (CH₂)_ncycloalkyl, (CH₂)_nphenyl, (CH₂)_n(substituted phenyl), or (CH₂)_n(1 or 2-naphthyl);

R¹² is lower alkyl, cycloalkyl, (CH₂)_ncycloalkyl, (CH₂)_nphenyl, (CH₂)_n(substituted phenyl), or (CH₂)_n(1 or 2-naphthyl);

R¹³ is hydrogen, lower alkyl, cycloalkyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl, (CH₂)_ncycloalkyl, (CH₂)_nphenyl, (CH₂)_n(substituted phenyl), or (CH₂)_n(1 or 2-naphthyl);

R¹⁴ is hydrogen or lower alkyl;

or R¹³ and R¹⁴ taken together form a five to seven membered carbocyclic or heterocyclic ring, such as morpholine, or N-substituted piperazine;

R¹⁵ is phenyl, substituted phenyl, naphthyl, substituted naphthyl, heteroaryl, (CH₂)_nphenyl, (CH₂)_n(substituted phenyl), (CH₂)_n(1 or 2-naphthyl), or (CH₂)_n(heteroaryl);

R¹⁶ and R¹⁷ are independently lower alkyl, cycloalkyl, phenyl, substituted phenyl, naphthyl, phenylalkyl, substituted phenylalkyl, or (cycloalkyl)alkyl;

R¹⁸ and R¹⁹ are independently hydrogen, alkyl, phenyl, substituted phenyl, (CH₂)_nphenyl, (CH₂)_n(substituted phenyl), or R¹⁸ and R¹⁹ taken together are -(CH=CH)₂-;

R²⁰ is hydrogen, alkyl, phenyl, substituted phenyl, (CH₂)_nphenyl, (CH₂)_n(substituted phenyl);

R²¹, R²² and R²³ are independently hydrogen, or alkyl;

X is CH₂, (CH₂)₂, (CH₂)₃, or S;

Y¹ is O or NR²³;

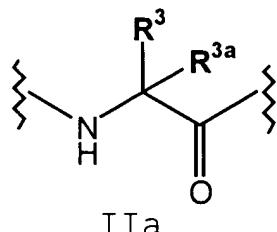
Y² is CH₂, O, or NR²³;

a is 0 or 1;

b is 1 or 2, provided that when a is 1 then b is 1;

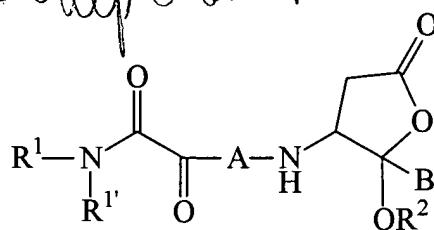
c is 1 or 2, provided that when c is 1 then a is 0 and b is 1;
m is 1 or 2; and
n is 1, 2, 3 or 4;
or a pharmaceutically acceptable salt thereof.

2. The compound of claim 1 wherein A is



3. The compound of claim 2 wherein R³ is lower alkyl.
4. The compound of claim 2 wherein R^{3a} is hydrogen.
5. The compound of claim 1 wherein R¹ is phenyl, substituted phenyl, naphthyl, substituted naphthyl, heterocycle, or substituted heterocycle.
6. The compound of claim 1 wherein R¹ is hydrogen.
7. The compound of claim 1 wherein R¹ is lower alkyl.
8. The compound of claim 1 wherein R¹ and R^{1'} taken together with the nitrogen atom to which they are attached form a heterocycle or substituted heterocycle.
9. The compound of claim 1 wherein B is CH₂O(2,3,5,6-tetrafluorophenyl).

10. The compound of claim 1 wherein B is hydrogen..
11. The compound of claim 1 wherein R² is hydrogen.
12. The compound of claim 1 in the cyclic ketal form and having the following structure:



13. The compound of claim 12 wherein B is lower alkyl or benzyl.
14. A pharmaceutical composition comprising a compound of claim 1 in combination with a pharmaceutically acceptable carrier.
15. A method for treating an autoimmune disease, comprising administering an effective amount of the pharmaceutical composition of claim 14 to a patient in need thereof.
16. A method of treating an inflammatory disease, comprising administering an effective amount of the pharmaceutical composition of claim 14 to a patient in need thereof.
17. A method of treating a neurodegenerative disease, comprising administering an effective amount of the pharmaceutical composition of claim 14 to a patient in need thereof.

18. A method of preventing ischemic injury to a patient suffering from a disease associated with ischemic injury, comprising administering an effective amount of the pharmaceutical composition of claim 14 to a patient in need thereof.

19. A method for expanding of hematopoietic cell populations or enhancing their survival, comprising contacting the cells with an effective amount of the pharmaceutical composition of claim 14.

20. The method of claim 19 wherein the cell populations are granulocytes, monocytes, erythrocytes, lymphocytes or platelets for use in cell transfusions.

21. A method of prolonging the viability of an organ that has been removed from a donor or isolated cells derived from an organ for the purpose of a future transplantation procedure, comprising applying an effective amount of the pharmaceutical composition of claim 14 to the organ or isolated cells to prolong the viability of the same as compared to untreated organ or isolated cells.

22. The method of claim 21 wherein the organ is an intact organ.

23. The method of claim 21 wherein the isolated cells are pancreatic islet cells, dopaminergic neurons, blood cells, or hematopoietic cells.